

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION

REGIONAL BOARD REPORT  
(REVISED)  
FOR

**TENTATIVE RESOLUTION NO. R9-2004-0013**

RECOMMENDATION TO THE  
STATE WATER RESOURCES CONTROL BOARD  
FOR THE ADOPTION OF AN EXCEPTION TO THE CALIFORNIA  
OCEAN PLAN  
FOR  
THE UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA

**Date:** April 14, 2004

**To:** John H. Robertus  
Executive Officer

**From:** Sabine A. Knedlik  
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## **A. SUMMARY**

On November 22, 2002, the University of California, Scripps Institution of Oceanography (Scripps), submitted an application in request for an Exception to the 2001 California Ocean Plan (Ocean Plan). Ocean Plan Prohibition, *Section III.H.2*, states that waste shall not be discharged to Areas of Special Biological Significance (ASBS). Scripps is discharging wastewater into the *San Diego Marine Life Refuge*, which is a designated ASBS.

The Marine Managed Areas Improvement Act, AB 2800, was signed by the Governor on September 8, 2000. This law added sections to the Public Resources Code (PRC) that are relevant to ASBS. The PRC defines a SWQPA as a “nonterrestrial marine or estuarine area designated to protect marine species or biological communities from an undesirable alteration in natural water quality, including, but not limited to, areas of special biological significance that have been designated by the State Water Resources Control Board through its water quality control planning process.” The re-classification of ASBS as SWQPA went into effect on January 1, 2003 (without Board action) pursuant to Section 36750 of the Public Resources Code.

*Section III.I.1* of the Ocean Plan states that the State Board may, in compliance with the California Environmental Quality Act, subsequent to a public hearing, and with the concurrence of the U.S. Environmental Protection Agency, grant Exceptions to the Ocean Plan if the State Board determines that (a) the Exception will not compromise protection of ocean waters for beneficial uses, and (b) the public interest will be served.

The State Board has requested that all existing wastewater discharges to SWQPA be reviewed and considered for compliance with the Ocean Plan and AB 2800. In response, Scripps, San Diego Region’s only regulated point source discharge into a SWQPA, has applied for an Exception to the Ocean Plan.

Scripps’ application and additional information was reviewed and found to be complete on November 26, 2003. The data and information submitted by Scripps to be considered for the Exception is sufficient for the State Board to determine that the Exception will not compromise protection of ocean waters for beneficial uses and that the public interest will be served. State Board staff determined that the existing data does not provide evidence that the discharge is causing a reduction of marine life nor that the discharge is compromising protection of ocean waters for beneficial uses.

A Resolution by the Regional Board is the appropriate way to inform the State Board that the Regional Board recommends the approval of the Ocean Plan Exception. The State Board intends to consider adoption of the Exception to the Ocean Plan Prohibition, *Section III.H.2*, at its June 17, 2004 meeting. If the Regional Board does not recommend the approval of the Exception, the Regional Board should direct the Executive Officer to request the State Board to postpone its consideration of the Exception.

## **B. BACKGROUND**

On March 21, 1974, the State Board, in Resolution No. 74-28, designated 31 “Areas of Special Biological Significance” (now called SWQPA) in ocean waters along the California coastline, including the *San Diego Marine Life Refuge* and the *San Diego La Jolla Ecological Reserve*. The State Board adopted the 2001 California Ocean Plan (Ocean Plan) on November 16, 2000. The Ocean Plan prohibits waste being discharged to ocean waters that are designated SWQPA.

The *San Diego Marine Life Refuge* and the *San Diego La Jolla Ecological Reserve* are contiguous Pacific Ocean areas adjoining the La Jolla neighborhood of the City of San Diego. The combined area of these two contiguous SWQPAs is approximately 541 acres. The *San Diego Marine Life Refuge* is approximately 88 acres and has about 0.6 miles of coastline. The *San Diego La Jolla Ecological Reserve* is approximately 453 acres and has about 1.7 miles of coastline.

There are 92 identified waste discharge points consisting of storm drain outlets from residential, commercial, municipal, and industrial areas, as well as non-point and point source discharges into the *San Diego Marine Life Refuge* and 184 identified waste discharge points into the *San Diego La Jolla Ecological Reserve*. The University of California, Scripps Institution of Oceanography (Scripps) discharges wastewater into the *San Diego Marine Life Refuge*, and is currently the only regulated point source discharge into a SWQPA in the San Diego Region.

Scripps is regulated under an NPDES permit to discharge seawater that has been circulated through various aquaria (Stephen Birch Aquarium as well as the institutions’ laboratory aquaria). The discharge of wastewater from Scripps crosses the beach and at times commingles with stormwater and urban runoff.

Scripps has been discharging wastewater from its aquaria into the ocean since 1910. Scripps’ first NPDES permit was Order No. 74-47, issued by the San Diego Regional Board on September 16, 1974. Finding No. 5 of the Order stated that the State Board designated the *La Jolla Ecological Reserve* as a SWQPA and that discharges into SWQPAs are prohibited if the natural water quality conditions could be altered by the discharge. It was incorrectly identified at the time that the discharge entered the *La Jolla San Diego Ecological Reserve*. The actual discharge flows into the *San Diego Marine Life Refuge*. Finding No. 13 of the Order states that the Regional Board made the finding that the discharge has not nor is not expected to alter the natural water quality conditions of the SWQPA.

The permit was re-issued in 1979, 1984, and 1994. The most recent permit, issued in 1999, is Order No. 99-83, NPDES Permit No. CA0107239.

*Section III.I.1* of the Ocean Plan states that the State Board may, in compliance with the California Environmental Quality Act, subsequent to a public hearing, and with the concurrence of the Environmental Protection Agency, grant Exceptions to the Ocean Plan if the Board determines that (a) the Exception will not compromise protection of ocean waters for beneficial uses, and (b) the public interest will be served. For the current wastewater discharge to be in compliance with the 2001 California Ocean Plan the State Board must approve the Exception.

### C. FACILITY DISCHARGE HISTORY

Scripps has been discharging wastewater into the ocean in the vicinity of its pier at since 1910. The first Waste Discharge Requirements were issued by the Regional Board on September 30, 1969 (Order 69-R24). The current seawater intake system has a capacity to pump approximately 1 million gallons per day of seawater from the seaward end of the Scripps Pier. The water is filtered through two sand filters before it is pumped to two storage tanks. The water is pumped to several of Scripps' research laboratories and aquaria.

Scripps discharges wastewater through five outfalls, outfall 1, 2, 3, 4A, and 4B.

- Outfall 1: Discharges approximately 450,000 gallons per day of wastewater that has been circulated through the Stephen Birch Aquarium, National Marine Fisheries Aquarium, Hydraulic Laboratory, and Hubbs Hall.
- Outfall 2: Discharges approximately 2,000 gallons per day of wastewater from Scholander Hall aquaria.
- Outfall 3: Discharges approximately 210,000 gallons per day of wastewater from the Experimental Aquarium and the Ring Tank.
- Outfall 4A and 4B: Discharges approximately 50,000 gallons per day of wastewater. Outfall 4A discharges intake water and settling tank overflow while Outfall 4B discharges sand filter backwash water.

The wastewater from all outfalls is discharged onto the beach where it flows across the beach and into the *San Diego Marine Life Refuge*. Order No. 99-83 establishes an initial dilution ratio of 2:1 for the Scripps wastewater discharges into the surf zone. On June 17, 2003 receiving water samples were taken 0.25 mile offshore from Scripps seawater intake. The samples were analyzed for copper and resulted in an average copper background concentration of 2 µg/L. The result coincides with the background copper seawater concentration stated in the Ocean Plan to calculate effluent limitations.

The wastewater from the aquaria has contained measurable concentrations of copper, which is derived from copper sulfate used as a treatment for disease control in the aquaria. Between 1994-2003, measurements of copper in the wastewater from Outfall 1 ranged from a high of 31µg/L to 4 µg/L (daily maximum). Copper is known to be toxic to marine life. Those copper concentrations, at times, have resulted in excursion above the Ocean Plan's receiving water quality objectives.

The Stephen Birch Aquarium uses a variety of other additives, such as citric acid, formalin, and trichlorfon, which are eventually discharged. On September 23, 2003 a sample representing the daily maximum concentrations of these additives in the effluent, including copper at a concentration of approximately 10 µg/L, was analyzed for toxicity. The sample was not acutely toxic and the chronic toxicity NOEC (no observed effect concentration) was 100% for three different test species.

Storm water and non-storm water runoff have been, and continue to be, co-mingled with wastewater. Samples of storm water runoff, collected before entering the facility's stormwater system, ranged from 22 to 360 µg/L for copper and from non-detect to 9 mg/L for oil and grease. The State Board will require Scripps to implement a Storm Water Management Plan on an accelerated schedule to prevent degradation of the SWQPA during storm events and to eliminate dry weather urban runoff from entering the *San Diego Marine Life Refuge*.

#### **D. ENVIRONMENTAL IMPACTS**

In 2003, AMEC Earth and Environmental, Inc. performed a marine biological survey in the vicinity of the Scripps discharges. The report stated that the survey could not and was not designed to determine any causal effect from the discharge, but to characterize the respective areas within a specific period of time. The report stated that many of the species that occur in the sandy intertidal and subtidal habitats have a high emigration and immigration rate, which contributes to the large amount of temporal and spatial irregularity. Given the results of the survey and taking into consideration the variability of the habitat, State Board staff determined that no absolute statements about impacts could be made. State Board staff, however, determined that the existing data does not provide evidence that the discharge is causing a reduction of marine life or that the discharge is compromising protection of ocean waters for beneficial uses. The State Board will consider additional monitoring on a regular basis, using consistent and sensitive techniques in order to better detect impacts to the area, as a condition when granting the Exception.

As a result of the environmental review associated with Scripps request for the Exception, the State Board will consider recommending to the Regional Board additional monitoring requirements for the existing NPDES permit as conditions for granting the Exception. The additional monitoring requirements will ensure that any environmental impacts that may arise will be detected and corrected immediately.

#### **E. ALTERNATIVES TO THE EXCEPTION**

If the State Board does not issue an Exception to the Ocean Plan prohibition, Scripps would be required to terminate the discharge of wastewater to the *San Diego Marine Life Refuge*.

#### **F. ENVIRONMENTAL BENEFITS**

Scripps Institute of Oceanography is a major marine science institution, providing education to oceanography students and opportunities and facilities for cutting edge oceanographic research, including research performed by or for government agencies. Much of the research and education performed at Scripps utilizes and is dependant on the flow-through seawater system. In addition, the Stephen Birch Aquarium is an important venue for public education regarding marine biology and conservation. The Aquarium also depends on the use of the flow-through seawater system. While Scripps' seawater system does discharge wastewater into the *San*

*Diego Marine Life Refuge*, the quality of that discharge may be controlled through the application of management practices and specific controls. It is in the public's best interest, especially with regard to marine environmental conservation and protection, to allow Scripps to continue to discharge within the confines of these specific conditions.

#### **G. RECOMMENDATION**

It is recommended that the Regional Board adopt tentative Resolution No. R9-2004-0013. State Board's granting of an Exception from the discharge prohibition to SWQPA in the Ocean Plan will not compromise the protection of ocean waters for beneficial uses and the public interest will be served.

The State Board's approval of the Ocean Plan Exception request will allow Scripps to continue its wastewater discharge into the *San Diego Marine Life Refuge*.